

Nevertheless, on the basis of the work by Morrison (1988) and what is known of the spawning behaviour of the related *T. tandanus*, I would suggest that the behaviour was related to spawning or pre-spawning activities. Scarp Pool is easily accessible, and I would recommend that it be used by any interested researcher as a site to study in more depth the behaviour of *T. bostocki*.

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LONG-BILLED CORELLAS HAVE AN UNCERTAIN STATUS IN THE SOUTH-WEST OF WESTERN AUSTRALIA

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ABSTRACT

An accurate estimate of the number of birds comprising the population of Western Long-billed Corellas at Lake Muir was required to assess the potential for damage to grain crops and seedling trees. A ground-based count of corellas was carried out in May 1991 and two aerial surveys were flown in a Cessna 182 — the first in July 1990 and the second in March 1991. Approximately 1420 birds were counted during the ground-based survey and between 800 and 920 birds were observed during the aerial surveys. More population estimates are needed before firm conclusions can be made about the size and stability of the corella population. Poisoning and shooting campaigns for control of damage to agriculture have the potential to cause a rapid decrease in the corella population.

INTRODUCTION

The Western Long-billed Corella (*Cacatua pastinator pastinator*) (Ford 1985) is endemic to the south-west of Western Australia, where it occurs in populations centred around Moora/Dalwallinu and Lake Muir/Tonebridge. It was recently placed in Schedule 1 of the Rare and Endangered Species List by the Department of Conservation and Land Management (C.A.L.M.) (Western Australian Government Gazette, November 1990). Birds in the Lake Muir/Tonebridge population eat newly sown grain and destroy seedling trees and consequently are sometimes killed by landholders. In 1985 the population at Lake Muir/Tonebridge was reported to number approximately 3000 birds with flocks of up to 1000 observed at Dinninup and Orchid Valley (Storr 1991). [The northern population is estimated to number

approximately 5000 birds (Smith 1982)]. Lack of accurate data on the present size of the Lake Muir population and its capacity for increase has created difficulties in predicting the birds' potential to damage crops and the potential threat to the corella population from control measures.

This study attempted to estimate the size of the population of corellas in the Lake Muir/Tonebridge area (The data were collected as part of an investigation of the nature and amount of damage to oat crops and trees caused by corellas in the Lake Muir/Tonebridge area.)

METHODS

Between May 1990 and November 1991 the distribution of corellas was estimated from searches by APB staff and from landholders' information.

Two aerial surveys were conducted — on 5 July 1990 and the other on 6 March 1991. A Cessna 182 (A.P.B. Vertebrate Pest Research Section aircraft) was used for both surveys flying at a height of 60 to 90 m and an air speed of approximately 165 km/h. The 1990 and 1991 surveys began at 1200 hrs and 0830 hrs respectively and continued for 2 and 3.5 hours respectively. The survey team comprised a pilot, a front-right observer/navigator and a back-left observer. Topographical maps (1:250 000) of the study area were used for navigation and for recording the locations of corellas. The two observers (M. Massam and J. Long) independently counted all corellas seen and the results were averaged to obtain final estimates. In most instances birds were counted singly or in small 'parcels' of an estimated 5, 10 or 20 individuals.

On 27 May 1991 an intensive ground search was made of most of the areas known to support corellas. Two observers (M. Massam and J. Long) counted birds from a vehicle for six hours. The area covered approximated that of the March 1991 aerial survey except that time limitations prevented a search of the area east of Boyup Brook (i.e. Kulikup and Qualeup area). At sites where corellas had been previously recorded the vehicle was stopped and both observers listened for corella calls. Landowners also offered directions on the day which led to the discovery of some new flocks.

(The amount of information on distribution increased markedly with time and resulted in longer routes for the March 1991 aerial survey and the ground survey than for the earlier July 1990 aerial survey.)

RESULTS

The numbers of corellas counted, their distribution and the survey routes are detailed in Figures 1, 2 and 3. Approximately 1420 corellas were observed during the May 1991 ground search (Figure 1). Large flocks were observed at Chowerup, Bokerup, Rocky Gully, Mordalup and Tonebridge.

During the aerial surveys the number of corellas counted by each observer was similar. During the 1990 survey 800 and 830 corellas (mean = 815) were counted respectively (Figure 2). Large flocks were observed at Tonebridge and Bokerup. Eight hundred and twenty one and 917 corellas (mean = 869) respectively were counted by the observers during the 1991 survey (Figure 3). Flocks of about 300 birds were observed at Tonebridge and Chowerup. No birds were observed in some areas (Qualeup and Kulikup) where they had been seen by landowners.

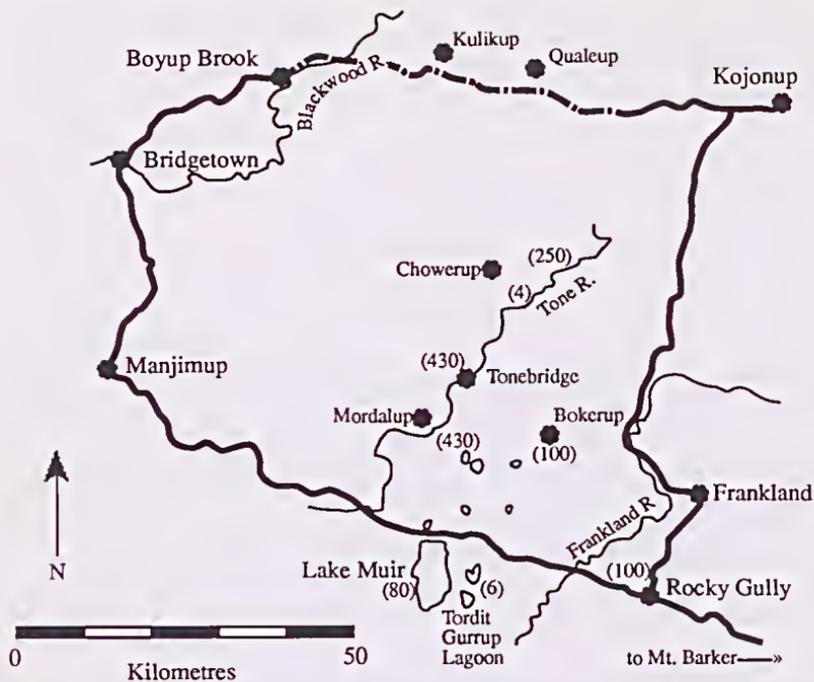


Figure 1: Locations and numbers of corellas observed during the May 1991 ground survey of the Lake Muir area.



Figure 2: Flight route, locations and numbers of corellas observed during the July 1990 aerial survey of the Lake Muir area.

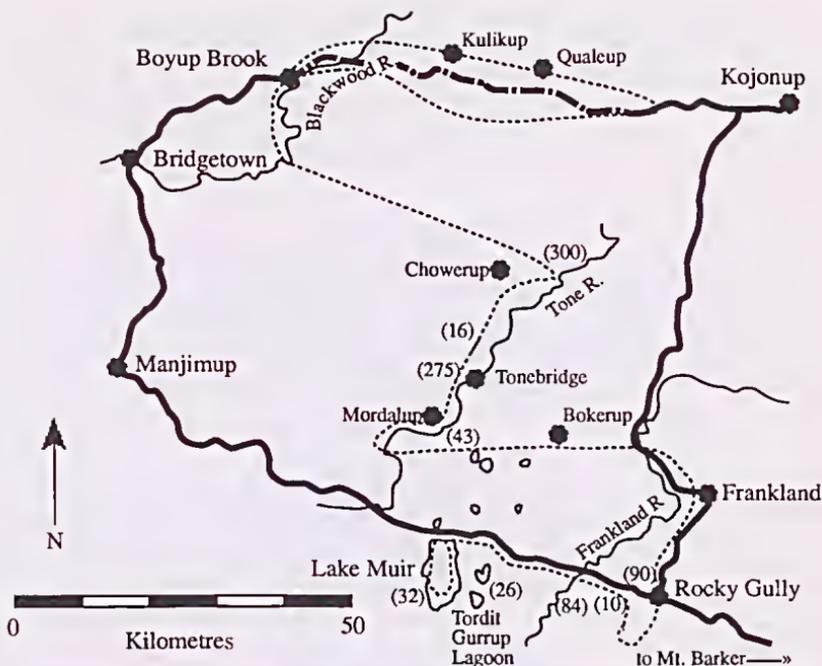


Figure 3: Flight route, locations and numbers of corellas observed during the March 1991 aerial survey of the Lake Muir area.

DISCUSSION

This study found that the population of Long-billed Corellas centred at Lake Muir comprised at least 1420 birds — a lower number than the 3000 birds estimated by Storr (1991). The difference between the two population estimates may reflect a decrease in population size between 1985 and 1991. However frequent population estimates, performed over a longer time interval will be needed before firm conclusions can be made about the size and stability of the population of corellas. Hence no assessment of the birds' potential to cause increased levels of damage was possible.

Factors which may affect the size and stability of the corella population include the availability of food resources and nest sites, the productivity of the species and lethal control campaigns. The development of farming has resulted in the provision of adequate food (grains and weed species) for the birds (Smith and Moore 1991). Availability of nest sites has not been assessed but appears to be adequate. Species productivity is relatively low; on average a pair of Long-billed Corellas must breed for 10 years to replace themselves (Smith 1991). This indicates that if the population was reduced to a very low level it would be unable to recover. The potential exists for a rapid decrease in the population size if mass poisonings or shooting campaigns are used to control corella numbers (Saunders *et al.* 1985).

Corella and other species of cockatoo are particularly vulnerable to poisoning campaigns because they amalgamate into large flocks during the non-breeding season (Saunders *et al.* 1985). Such flocks can represent a large proportion of

the entire population (Saunders 1980; Saunders *et al.* 1985). The destruction of some of the large flocks observed during this study by either poison baiting or shooting would substantially reduce the size of the population. The population could then be unviable as a result of the low productivity of the species and because a high percentage of the breeding birds may have been destroyed [only 30% of the total population may be breeding birds (G. Smith, C.S.I.R.O., pers. comm.)].

The discrepancy between the numbers of corellas observed during the 1991 aerial and ground surveys indicated that ground surveys may be very useful for estimating corella numbers. A higher number of birds were observed during the ground survey because it was possible to listen for corellas and to obtain directions to flocks from landholders. The aerial surveys were useful for checking areas not easily covered on the ground.

CONCLUSION

The status of the Long-billed Corella in the south-west is currently uncertain. This is because the stability of the population is largely unknown and this relatively small group is vulnerable to lethal control campaigns.

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